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Red Hat Enterprise Linux Release 9.2 Manual Pages on 'catanl.3' command

$ man catanl.3

CATAN(3) Linux Programmer's Manual CATAN(3)

NAME

catan, catanf, catanl - complex arc tangents

SYNOPSIS

#include <complex.h>

double complex catan(double complex z);

float complex catanf(float complex z);

long double complex catanl(long double complex z);

Link with -lm.

DESCRIPTION

These functions calculate the complex arc tangent of z. If y = catan(z), then z = ctan(y). The real part of y is chosen in the interval [-pi/2,pi/2].

One has:

catan(z) = (clog(1 + i * z) - clog(1 - i * z)) / (2 * i)

VERSIONS

These functions first appeared in glibc in version 2.1.

ATTRIBUTES

For an explanation of the terms used in this section, see at? tributes(7).

??

?Interface ? Attribute ? Value ?

??

?catan(), catanf(), catanl() ? Thread safety ? MT-Safe ?

??

CONFORMING TO

C99, POSIX.1-2001, POSIX.1-2008.

EXAMPLES

```
/* Link with "-lm" */

#include <complex.h>
#include <stdlib.h>
#include <unistd.h>
#include <stdio.h>

int
main(int argc, char *argv[])
{
    double complex z, c, f;
    double complex i = I;

    if (argc != 3) {
        fprintf(stderr, "Usage: %s <real> <imag>\n", argv[0]);
        exit(EXIT_FAILURE);
    }

    z = atof(argv[1]) + atof(argv[2]) * I;
    c = catan(z);
    printf("catan() = %6.3f %6.3f*i\n", creal(c), cimag(c));

    f = (clog(1 + i * z) - clog(1 - i * z)) / (2 * i);
    printf("formula = %6.3f %6.3f*i\n", creal(f2), cimag(f2));

    exit(EXIT_SUCCESS);
}
```

SEE ALSO

ccos(3), clog(3), ctan(3), complex(7)

COLOPHON

This page is part of release 5.10 of the Linux man-pages project. A description of the project, information about reporting bugs, and the latest version of this page, can be found at https://www.kernel.org/doc/man-pages/.